



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/050,476

01/15/2002

Lixiao Wang

1001.1445101

6164

28075 7590 12/29/2006
CROMPTON, SEAGER & TUFTE, LLC
1221 NICOLLET AVENUE
SUITE 800
MINNEAPOLIS, MN 55403-2420

EXAMINER

GILBERT, ANDREW M

ART UNIT

PAPER NUMBER

3767

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

12/29/2006

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<p align="center">Office Action Summary</p>	<p align="center">Application No.</p> <p align="center">10/050,476</p>	<p align="center">Applicant(s)</p> <p align="center">WANG ET AL.</p>	
	<p align="center">Examiner</p> <p align="center">Andrew M. Gilbert</p>	<p align="center">Art Unit</p> <p align="center">3767</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-12, 16-19 and 21-23 is/are pending in the application.
- 4a) Of the above claim(s) 18 and 19 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16, 17 and 21-23 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgements

1. This office action is in response to the reply filed on 10/19/2006.
2. In the reply, claims 1-8, 10-12, 16-19, 21-23 are pending and claims 18 and 19 being previously withdrawn.
3. The Applicant amended the specification to correctly refer to tradename LICA-44 by the correct chemical structure.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peters et al (5549552) in view of Krahne et al (5470923). In reference to claims 1-5, Peters et al discloses a medical balloon catheter device (Figs 2) having a metallic hypotube (33), a polymeric tubular member (34) disposed over at least a portion of the metallic hypotube forming a lap joint (Fig 2; col 7, lns 14-23), a coupling adhesive agent disposed between the metallic hypotube and the polymeric tubular member within the lap joint (col 7, lns 14-23), where the polymeric tube is disposed on the outside of the metallic hypotube (Fig 3A), and the polymeric tube is disposed on the inside of the metallic hypotube (Fig 3B). However, Peters et al does not disclose that the coupling agent is a functionalized titanate.

Art Unit: 3767

6. Krahnke et al teaches that it is known to have titanate derivatives (col 7, ln 57-col 8, ln 3) used at coupling agents (col 8, lns 46-59; col 9, lns 11-19) in a medical grade adhesive (col 1, ln 19-23, 26; Summary) for the purpose of adhering an object to a surface by a medical grade adhesive. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the coupling agent as taught by Peters et al with the titanate derivative coupling agent as taught by Krahnke et al for the purpose of adhering an object to a surface by a medical grade adhesive.

7. In reference to claims 6-8, Peters et al and Krahnke et al disclose the invention substantially as claimed except for expressly disclosing that the coupling agent is in liquid, paste, or powder form. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have the coupling agent be a liquid, paste, or powder form because the Applicant has not disclosed that the coupling agent being in liquid, paste, or powder form provides an advantage, is used for a particular purpose, or solves a stated problem. Furthermore, one of ordinary skill in the art would have expected the Applicants invention to perform equally well with coupling agent of Peters et al and Krahnke et al because the coupling agent performs the same function as bonding a metallic and polymeric surface together. Therefore, it would have been an obvious matter of design choice to modify the coupling agent of Peters et al and Krahnke et al to obtain the invention as specified in claims 6-8.

8. In reference to claims 10-12, Peters et al and Krahnke et al disclose the invention substantially as claimed except for expressly disclosing that the functionalized titanate is

Art Unit: 3767

LICA-38, LICA-44, or LICA-97 (chemical trade name used). At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have the functionalized titanate be LICA-38, LICA-44, or LICA-97 because the Applicant has not disclosed that having the functionalized titanate be LICA-38, LICA-44, or LICA-97 provides an advantage, is used for a particular purpose, or solves a stated problem. Furthermore, one of ordinary skill in the art would have expected the Applicants invention to perform equally well with functionalized titanate of Peters et al and Krahinke et al because the functionalized titanate performs the same function of bonding a metallic and polymeric surface together. Therefore, it would have been an obvious matter of design choice to modify Peters et al and Krahinke et al to obtain the invention as specified in claims 10-12.

Response to Arguments

9. Applicant's arguments, see Remarks, filed 10/19/2006, with respect to claims 16-17, 21-23 have been fully considered and are persuasive. The rejection of claims 16-17, 21-23 has been withdrawn.

10. Applicant's arguments filed 10/19/2006 with respect to claims 1-8, 10-12 have been fully considered but they are not persuasive.

11. The Applicant argues that:

- i. There is no motivation to combine the references because Peters already contains an adhesive that "provides sufficient bond strength" thus there is no motivation to add a second adhesive or replace the adhesives of Peters with an adhesive such as the adhesives in Krahinke. Neither

reference suggests that the adhesive of Krahne would form a better bond than the adhesive of Peters. (Remarks, pg 8, paragraph 1)

ii. Krahne does not disclose a titanate being used on its own as an adhesive. Furthermore, "Khranke does not disclose titanates being used as coupling agents". Thus, because they are not being used as adhesives it cannot be said that there is motivation to use the titanates of Krahne as an adhesive in the structure of Peters. Neither reference suggests using a titanate for anything other than a catalyst.

12. In response to applicant's argument (i) that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, simply because Peters states that there is a sufficient bond strength from the disclosed adhesives does not prevent motivation from a secondary reference for providing a suggestion to combine. Of course the disclosed adhesives of Peters provide sufficient bond strength and make the lap joint of Peters fully functional in the invention. If those adhesives were not sufficient, they would have never been disclosed in the application. Krahne, the secondary reference, however, does provide clear benefits and motivation for suggesting to combine the disclosed functionalized titanate coupling agent as a

coupling agent for Peters et al to form a lap joint between a metallic tubular element and a polymeric tubular member. Krahnke clearly discloses the at least the following:

- a. "A catalyst is advantageously included to promote the moisture-initiated reaction of silicon bonded curing radicals to form siloxane bonds." (col 2, lns 21-24);
- b. "...the catalyst is an organic titanate." (col 2, lns 25-26)
- c. "The compositions of this invention are useful for adhering an object without the need for means to hold the object in place while the adhesive cures." (col 2, lns 31-34)
- d. "... it is desirable to use a titanate catalyst such as tetrabutyl titanate" (col 7, lns 47-48)
- e. "...further comprise an effective amount of a catalyst component to accelerate the reaction of the curing radicals with moisture to form siloxane bonds." (col 7, lns 51-53)
- f. "... embodiments thereof will cure to the permanent adhesive state upon exposure to ambient moisture." (col 8, lns 48-51).

13. In response to applicant's argument (ii) that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the functionalized titanate being used as an adhesive) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The Examiner notes that the Applicant

Art Unit: 3767

merely recites that a coupling agent, being a functionalized titanate, is disposed between the metallic tubular member and the polymeric tubular member. The Applicant does not recite that the functionalized titanate is an adhesive or functions to form bonds between the metallic or polymeric members.

14. Furthermore, Webster's defines a catalyst as a substance that enables a chemical reaction to proceed at a usually faster rate or under different conditions than otherwise possible thus promoting the reaction. Likewise, a coupling agent is a substance that promotes bonding between two different materials. Thus, a coupling agent is a type of catalyst because it promotes a chemical reaction, or bonding, to proceed at a faster rate or under different conditions between two materials promoting the reaction.

15. Thus, one of ordinary skill in the art finds motivation in Krahne to use a functionalized titanate catalyst (b, d) as a coupling agent (a, b, d, e) to promote a reaction (a, e) providing an adhesive (a, e) for the purpose of forming an adhesive bond that does not require means to hold the object in place while the adhesive cures and functions in a moisture laden environment (c, f). Krahne's adhesive provides benefits that would prove useful to be useful in a lap joint such as Peters (a-f). Thus, the rejection is maintained.

Allowable Subject Matter

16. Claims 16-17, 21-23 are allowed.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew M. Gilbert whose telephone number is (571) 272-7216. The examiner can normally be reached on 8:30 am to 5:00 pm Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Sirmons can be reached on (571)272-4965. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3767

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Andrew Gilbert

KEVIN C. SIRMONS
SUPERVISORY PATENT EXAMINER

